

Detailed Action

In response to the amendment filed on 04/01/2010, Claims 1-19 are pending, Claim 20 is cancelled..

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 15 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claim limitations regarding “timing correction between the detected user actions and the target times, without affecting the timing of the indication of target actions by the display for indicating successive target actions, for the duration of each group of target actions” is presented as a negative limitation. Any negative limitation or exclusionary proviso must have basis in the original disclosure. The limitation “without affecting....” does not have support in the specification or described in a manner for any person of ordinary skill in the art to make and use the invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sone et al. (US 5,804,752) in view of Jae-Chang (US 5,511,053).

Regarding claims 1 and 15 Sone discloses a karaoke apparatus with individual scoring comprising:

Monitor (display) 46 for indicating successive target actions to be executed by the user, each target action having an associated time of execution (See Col.3, 48- Col 4 line 31), scoring logic in which user actions are compared with the target actions (See Col.7, 24- 50), input arrangement for detecting user actions(e.g. voice processing and microphone)(See Fig.1), Comparators for comparing a detected sequence of user actions with a sequence of target actions(e.g. difference calculator)(See Col.7, 4-23 and Fig.7, element 5031) and a CPU 30 (detector) that detects the timing offset between the sequences of user actions and corresponding sequence of target actions (See Fig.3 and Col.3, 48-Col.4, 20). Regarding the limitation of the timing offset not affecting the timing of the indication of target actions by the display, Sone on Col 4 line 10 (whole paragraph) teaches sequence data for displaying lyric words of karaoke music on a monitor 46, this sequence data in a MIDI file form controls the display and the wipe times of the words on the screen and is not dependant on the timing offset. Regarding the limitation of successive groups of target actions, Sone on Col 9 line 26 (whole paragraph) teaches voice signals are inputted from the two microphones. The singing

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voice signals are converted by the A/D converters into digital data. The resultant pieces of digital data are inputted into the data extractors. The digital data is frequency-counted in a unit of frame time of 50 ms thus making it possible to divide the song in to a successive group of target actions. Sone does not specifically disclose that the timing offset is detected at the beginning of each group of target actions and that the timing offset is applied as the relative displacement between the detected user actions and the target times for the duration of each group of target actions and that the timing action as applied a timing correction. Jae-Chang discloses a Karaoke apparatus with music singer evaluation capabilities, wherein the time difference between the aural synchronized signal or the reference signal and the user input signal is used to assess user's singing ability (See Abstract and Fig2C Col.3, 58-63 and Col.4, 43-6). Jae-Chang also teaches time difference signal "e" which differentiates between a case where the user's aural signal is running ahead of the aural synchronizing signal "a" and a case where the user's aural signal is lagging behind the aural synchronizing signal "a". Further, the clock signal, which changes its period in accordance with the time difference to, is input the audio signal "b" temporarily stored in the buffer, is output at an appropriately adjusted speed through the amplifier of the monitor in response to the time difference. Thus Jae-Chang teaches timing corrections. Therefore, it would have been obvious to one of ordinary skill in the art to modify Sone's invention to incorporate the features of the Jae-Chang's invention in order to design a system with more precise method for user's skill evaluation.

Regarding claims 2 and 4, Sone discloses that the user action involves generation of musical notes (e.g. singing in the microphone) and that the scoring logic is operable to detect that the user has successfully carried out a target action if a musical note is within the tolerance amount (See Col.6, 48-Col.7, 23 and Figs 8B, 8C and 9)

Regarding claim 3, Sone discloses that the target actions indicate a required musical note (See Col.7, 51-65).

With respect to claim 5, Sone discloses that the target actions indicate the required word to be song (e.g. the lyrics), the user action involves singing the required word (e.g. to the microphone) (See Col.4, 10-21) and that the scoring logic is operable to vary the tolerance amount in dependence on the required word (See Col.6, 1-9 and 48-66 and Col.7, 51-65).

Regarding claims 6 and 7 Sone discloses that the scoring logic is arranged to detect a difference in tone between a target musical note and the multiple of user-generated notes and further the scoring logic is operable not to carry out the comparison for a predefined set of words (See Col.8, 11-20 and 32-57).

With respect to claims 8-10, Jae-Chang further discloses that the successive actions are separated by pauses (See Col.5, 31-34) in which no user action is expected and wherein the scoring logic is arranged to detect the pauses.

With respect to claim 11, Sone discloses that the scoring logic is arranged to detect the correlation between the sequence of user actions and the sequence of target actions at two or more values of timing offset (e.g. takes the average of time differences through the singing practice) (See Col.9, 6-26). Sone does not specifically disclose that

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the timing offset is set to be one the possible values for which the correlation is greatest. However, the applicant has not disclosed if this feature solves any stated problem or is used for a particular purpose. Moreover, one of ordinary skill in the art would have expected the invention to work equally well with scoring method disclosed in Sone's invention. Therefore, it would have been obvious to one of ordinary skill in the art to modify Sone's invention to include other scoring logics because such modification would be considered as a matter of design choice.

Regarding claim 12, the Jae-Chang discloses comparing the user action to the target action at timing offsets (See Col.4, 66-Col.5,6) and to set the timing offset to zero(e.g. it determines that the user's singing matches that of reference audio signal) if there is less than a predetermined correlation between the sequence of user actions and target actions(See Col.5, 1-6 and 12-30).

Regarding claims 13 and 14, Sone discloses that the target times of execution define start times and duration in respect of the associated target actions (See Col.4, 25-50)

Claims 16-19 disclose means to perform claims 1 and 15 above.

With respect to claim 20, Jae-Chang discloses a display for indicating successive target actions to be executed by a user (See fig1, element 600 and col.5, 45-48), each target action having an associated target time of execution (See Abstract and Col.3, 58-63); scoring logic in which detected user actions are compared with target actions, scoring logic comprising:

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An input arrangement (e.g. voice detecting unit)(See Fig.1, element 410); a comparator for comparing a detected user actions (see fig.1, element 710); a detector for detecting a timing offset between the sequence of user actions and corresponding sequence target actions(See fig.1, element 420), in which for comparison purpose the apparatus is arranged to apply timing offset as a relative displacement between the detected user actions and the target times (See Figs, 3A-3F).

Jae-Chang does not specifically disclose that the target actions are arranged as successive group of target actions and that the timing offset is also calculated as the duration of each group of target actions. However, Sone discloses such in his invention (See Col.9, 11-25 and Col.4, 25-50). Therefore, it would have been obvious to one of ordinary skill in the art to modify Jae-Chang's invention to incorporate the scoring logics as disclosed by Sone in order to design a system that is more efficient in evaluating the overall performance of a singer.

Response to Arguments

Applicant's arguments filed 4/01/2010 have been fully considered but they are not persuasive. Applicant's arguments with respect to claim 1 and 15 have been considered but are moot in view of the new ground(s) of rejection. Regarding the applicants arguments that Sone teaches an error signal rather than a correction signal, the examiner would like to argue that Jae-Chang teaches a clock signal described on Col 14 line 23-43, which changes its period in accordance with the time difference between the aural signal and the baseline is output at an appropriately adjusted speed through the amplifier of the monitor in response to the time difference. Allowing to

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compensate for the lag and lead of the singer starting before or after the song. Please refer to the new grounds of rejection for Claims 1.

Regarding the applicants argument regarding timing correction applied group-by-group please see revised rejection for Claim 1 in light of the amendments. Sone teaches dividing the song in to intervals of 50ms allowing contiguous grouping of target actions.

Regarding the features not taught by Sone, please refer to rejection of Claim 1 under the new grounds of rejection necessitated by the amendments. Regarding i, Jae-Chang teaches a timing correction between the user and target actions using a detected offset. Regarding ii, Sone teaches dividing the music in to units of 50 ms allowing successive groups of target actions. Jae-Chang teaches the feature iii and iv that the timing offset is detected at the beginning of each group see Abstract, and the fact that Sone teaches dividing the music in to groups based on sampling every 50ms allowing target actions to be detected and analyzed.

Regarding the applicants arguments that the applicants invention is related to detecting whether the singer starts too early or too late, the examiner argues that the combination of Sone and Jae-Chang teach this feature. Particularly, Jae-Chang teaches compensating for the lag and lead when the song is leading or lagging. The inference being that this is done throughout the duration of the song, hence the synchronization also allows starting too early or too late.

The applicant argues that Jae-Chang does not take in to account acoustics of the hall, related to appreciable delay due to acoustic propagation. The examiner argues that

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Sone teaches on Col 4 line 54-57 that the DSP control data consists of data for designating effect types and data for designating the degree of effect attachment such as a delay time and an echo level.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PRATIK DESAI whose telephone number is (571)270-1559. The examiner can normally be reached on M-F from 8.00 AM to 5.00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xuan Thai, can be reached on (571) 272-7147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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